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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/551,006

05/30/2006

Jorg Peter

3425

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7590

03/21/2008

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EXAMINER

PATEL, VISHAL A

ART UNIT

PAPER NUMBER

3676

MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,006	Applicant(s) PETER ET AL.	
	Examiner Vishal Patel	Art Unit 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franson et al (US. 5,127,661) in view of Weinand (US. 3,656,227).

Franson discloses a sealing arrangement for hydraulic pistons or piston rods, comprising a U-cup (e.g. 78) of a viscoplastic synthetic material, a stationary machine part (e.g. 68) and a movable machine part (e.g. 84) with an outer radius R (Radius of 84), the U-cup (e.g. 78) is disposed as a contacting joint under radial pre-stress between the stationary machine part and the movable machine part in a profiled section (e.g. groove in 68 holding the U-cup) of the stationary machine part, the U-cup has a radially outer lip (e.g. 100) and a radially inner sealing lip (e.g. 92) on the high-pressure side, the stationary and the movable machine parts are separated on the low-pressure side by a sealing gap (e.g. gap near 80 between 68 and 84) of a sealing gap width B, wherein an abutment surface (e.g. 88) of the U-cup abuts a radially oriented region (e.g. back wall of the groove) of the profiled section on the low-pressure side, wherein the U-cup has an inner radius (inner radius of 78) and an outer radius (outer radius of 78), both in the unpressurized state and in the pressurized state, the inner radius of the U-cup in the region of the abutment surface is larger than the sum of R and B (figures 2 and 4) and the U-cup comprises an inner surface (e.g. inner surface of 92) facing the movable machine part. In the unpressurized

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state, the inner radius of the U-cup decreases (figure 4 shows that the inner radius decreases continuously), in particular continuously, from the low-pressure side towards the inner sealing lip (e.g. 92) in a region around the abutment surface. In the unpressurized state, the inner radius of the U-cup decreases continuously, in particular like a cone (cone shaped defined on the inner radius as shown in figure 4), from the low-pressure side N towards the inner sealing lip (e.g. 92) in a region from the abutment surface to the inner sealing lip. In that the U-cup has an outer surface (outer surface having 102) facing away from the movable machine part, the outer surface is curved concavely (concave surface after 102) in the unpressurized state. The inner surface is spaced from the movable machine part (as shown in figure 2, the inner surface of 102 is spaced from the movable machine part having surface 84, hence any recesses placed on this surface will also be spaced from the movable machine part, furthermore any recess is incapable of contacting a surface).

Franson discloses the invention substantially as claimed above but fails to disclose that the inner surface comprising several lubrication bore relief that are recesses and the recesses each extend in an axial direction from the low pressure side of the U-cup toward the inner sealing lip, and the radial depth of the individual recesses decreases from the low-pressure side of the U-cup toward the inner sealing lip. Weinand teaches a sealing member having a lip (e.g. 114), the lip having an inner surface (surface having recesses 80), the inner surface having recesses, the recesses extend from an air side (air side opposite 142), the recesses having a radial depth that decrease from the air side to the lip (the greatest depth of the recesses is shown near phantom line 36 which decreases from air side toward the lip, figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the inner

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surface of the lip of Franson to have recesses as taught by Weinand, to provide lubricant return and a film to reduce wear (inherent teaching of recesses on a lip). Furthermore the recesses of Weinand are considered to be microstructures (the term microstructure is a relative term and the recesses of Weinand are microstructure relative large recesses).

3. Claims 4 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franson and Weinand as applied to claims above, and further in view of Haberkorn (US, 3,189,359).

Regarding claims 4 and 6-7: Franson and Weinand fail to disclose that the outer and inner surface near the abutment surface is convex. Haberkorn teaches a seal having a U-shape having an abutment surface (12) and inner surface and outer surface (21 and 22) adjacent to the abutment surface that are convex like a circular arc (the surface 22 and 21 are convex). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the outer and inner surface of Franson and Weinand to be convex as taught by Haberkorn to provide proper sealing under high-pressure (column 3, lines 40-43 of Haberkorn).

Response to Arguments

4. Applicant's arguments filed 12/19/07 have been fully considered but they are not persuasive.

5. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., hydraulic pistons and piston rods) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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6. In response to applicant's argument that "for hydraulic pistons and piston rods", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

7. Applicants argument in second paragraph of page 6 in response filed on 12/19/07 is not persuasive because the primary reference of Franson teaches that the inner surface is out of contact except for the lip (see figure 2, lip 92 only contacts the movable wall 84) and the reference of Weinand is used to teach that an inner surface has microstructures to provide lubricant return.

8. Applicants' argument that recesses of Weinand contacts the surface 136 is not persuasive because the projections contact the surface 136 and not the recesses. Furthermore as stated in the rejection above the primary reference teaches that the inner surface is out of contact except the lip 92.

9. Furthermore by providing the microstructure of Weinand to the invention of Franson would provide better sliding effect because of lubricant being between the recess and the movable surface.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is 571-272-7060. The examiner can normally be reached on 6:30am to 8:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer H. Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/V. P./
Primary Examiner, Art Unit 3676

/Vishal Patel/
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